

Nebraska Department of Health and Human Services
Nebraska Early Hearing Detection and Intervention Program (NE-EHDI)
Recommended Newborn Hearing Screening Follow-up Algorithm

CONFIRMATION OF PERMANENT CHILDHOOD HEARING LOSS

1. Primary Care Provider refers newborn for Pediatric Audiologic Diagnostic Evaluation
 - History, documentation of risk factors
 - Otoscopic examination
 - High Frequency Tympanometry
 - Auditory Brainstem Response (ABR) measurements: clicks and frequency-specific (bone conduction, if needed)
 - Otoacoustic Emissions (OAE): distortion product or transient
2. Complete by 3 months of age (6 weeks preferred)
3. Evaluation results sent to NE-EHDI*

1. Primary Care Provider refers newborn to Early Development Network (IDEA, Part C) 1-888-806-6287
2. EDN reviews for eligibility
3. EDN may be able to provide assistance with diagnostic evaluation, treatment and follow-up services.

If hearing is normal and child has risk factors for hearing loss (see back), audiologic assessment should be conducted at least once by 24-30 months of age.
If no risk factors, screen prior to school

If permanent hearing loss is confirmed:

If middle ear dysfunction is suspected or confirmed, re-test after medical management.

1. Primary Care Provider refers infant for - Specialty Medical Evaluations
 - Otolaryngologist evaluation
 - Assessment of etiology (genetics evaluation)
 - Ophthalmology evaluation
 - Others, as needed (e.g., neurology)
2. Primary Care Provider refers infant to –
 - Early Development Network (Part C)
 - Others, as needed
3. Primary Care Provider confirms -
 - Ongoing Pediatric Audiologic Services, including hearing aid fitting and assistive listening devices
 - Early Intervention Services
4. Primary Care Provider completes Periodic Status Check and returns to NE-EHDI*

***NE-EHDI Contact Information**

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www.jcih.org
www.asha.org/public/hearing/testing
www.medicalhomeinfo.org/screening/hearing.html
www.aafp.org/afp/20011215/us.html
www.cdc.gov/ncbddd/ehdi/default.htm
www.infanthearing.org

**Risk Indicators Associated With Permanent Congenital, Delayed-Onset or
Progressive Hearing Loss in Childhood**

Joint Committee on Infant Hearing, 2007 Position Statement

- 1 **Caregiver concern* regarding hearing, speech, language, or developmental delay (Roizen, 1999).**
- 2 **Family history* of permanent childhood hearing loss (Cone-Wesson et al., 2000; Morton & Nance, 2006).**
- 3 **Neonatal intensive care of >5 days, or any of the following regardless of length of stay: ECMO,* assisted ventilation, exposure to ototoxic medications (gentamycin and tobramycin) or loop diuretics (furosemide/lasix), and hyperbilirubinemia requiring exchange transfusion (Fligor et al., 2005; Roizen, 2003).**
- 4 **In-utero infections, such as CMV,* herpes, rubella, syphilis, and toxoplasmosis (Fligor et al., 2005; Fowler et al., 1992; Madden et al., 2005; Nance et al., 2006; Pass et al., 2006; Rivera et al., 2002).**
- 5 **Craniofacial anomalies, including those involving the pinna, ear canal, ear tags, ear pits, and temporal bone anomalies (Cone-Wesson et al., 2000).**
- 6 **Physical findings, such as white forelock, associated with a syndrome known to include a sensorineural or permanent conductive hearing loss (Cone-Wesson et al., 2000).**
- 7 **Syndromes associated with hearing loss or progressive or late-onset hearing loss,* such as neurofibromatosis, osteopetrosis, and Usher syndrome (Roizen, 2003). Other frequently identified syndromes include Waardenburg, Alport, Pendred, and Jervell and Lange-Nielson (Nance, 2003).**
- 8 **Neurodegenerative disorders,* such as Hunter syndrome, or sensory motor neuropathies, such as Friedreich ataxia and Charcot-Marie-Tooth syndrome (Roizen, 2003).**
- 9 **Culture-positive postnatal infections associated with sensorineural hearing loss,* including confirmed bacterial and viral (especially herpes viruses and varicella) meningitis (Arditi et al., 1998; Bess, 1982; Biernath et al., 2006; Roizen, 2003).**
- 10 **Head trauma, especially basal skull/temporal bone fracture* requiring hospitalization (Lew et al., 2004; Vartialnen et al., 1985; Zimmerman et al., 1993).**
- 11 **Chemotherapy* (Bertolini et al., 2004).**

* Risk indicators that are marked with an asterisk are of greater concern for delayed-onset hearing loss.